

Serial No. 10/056,063
Atty. Dkt. No. P66143US1

LISTING OF CLAIMS:

1. Canceled

¹
~~2.~~ (Currently Amended) A biologically pure culture according to claim ¹~~1~~ which is that of *Saccharomyces cerevisiae* BPSC-15 (NRRL Y-30630).

²
~~3.~~ (Original) A biologically pure culture according to claim ¹~~2~~ wherein the organism converts sugars to ethanol at a high rate due to the ability of the organism to maintain a high density of cells in a bio-reactor by virtue of the high settling rate of the flocs.

Claims 4-17 (Canceled; Claims 4-16 are reinstated below as claims 18-30)

³
~~18.~~ (New - Corresponding to Original Claim 4) A method for producing ethanol 'beer' solution in a bio-reactor from a fermentation medium comprised of a fermentable carbohydrate, optional recycle stillage, and requisite nutrients, a at pH of between 3.0 and 8.0, a temperature between 5 and 45°C, and an effective amount of *Saccharomyces cerevisiae* BPSC-15 of claim ¹~~2~~.

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~~19.~~ (New - Corresponding to Original Claim 5) A method according to claim ³~~18~~, wherein the fermentation is a batch process under agitation and optional aeration.

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20. (New - Corresponding to Original Claim 6) A method according to claim ³18, wherein the fermentation is a consecutive batch mode method under agitation and optional aeration comprising decanting completed beer from a settled cell layer ³formed upon completion of a fermentation and cessation of agitation and the optional aeration³, immediate refilling of the bio-reactor with fresh fermentation media to allow successive batch fermentations, and repeating the foregoing.

⁶
21. (New - Corresponding to Original Claim 7) A method according to claim ⁵20, wherein the settled layer of BPSC-15 formed upon cessation of agitation and optional aeration is between 2 and 80% of the reactor liquid volume, and consecutive fermentations are completed in a period of time ranging from 0.5 to 36 hours.

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22. (New - Corresponding to Original Claim 8) A method according to claim ³18, which is a continuous method comprising a number ²2 to ⁸8 of agitated and optionally aerated bio-reactors in series containing organism BPSC-15 wherein outflow of one bio-reactor is inflow of a following bio-reactor, fresh fermentation media is introduced continuously into a first bio-reactor, and completed beer recovered from overflow of a final bio-reactor of the series.

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23. (New - Corresponding to Original Claim 9) A method according to claim ⁷22 wherein the average residence time of the fermentation medium ⁷where average residence time is defined as total

28 fermentation broth volume divided by the volume of feed per hour³ in the series of bio-reactors in between 1 and 36 hours.

⁹
24. (New - Corresponding to Original Claim 10) A method according to claim ³18 which is a continuous method comprising introducing a suitable fermentation medium into a tower reactor, optionally agitated and/or aerated³, in which the organism BPSC-15 has formed an active layer of 10 to 90% of reactor volume, and completed beer is withdrawn from the reactor.

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25. (New - Corresponding to Original Claim 11) A method according to claim ³18 wherein the average residence time of fermentation medium in a tower reactor is between 1 and 36 hours.

¹¹
26. (New - Corresponding to Original Claim 12) A method according to claim ³18 where the fermentation medium comprises recycled stillage at 5 to 80% volume, such method reducing the net effluent from the ethanol production process.

¹²
27. (New - Corresponding to Original Claim 13) A method according to claim ³18 where the fermentation medium comprises black strap cane or beet molasses without other nutrients and recycled stillage at 0 to 40% by volume.

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¹³
~~28~~. (New - Corresponding to Original Claim 14) A method according to claim ³~~18~~ where the pH in the bio-reactor(s) is maintained at 3.5 to 4.0 via addition of ammonia or other suitable base with a beneficial result of limiting or eliminating problems with bacterial contamination.

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~~29~~. (New - Corresponding to Original Claim 15) A method according to claim ³~~18~~ where a final fermented product is a potable beer, wine, or is distilled to other drinkable spirits.

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~~30~~. (New - Corresponding to Original Claim 16) A method according to claim ³~~18~~ where the bio-reactor incorporates ethanol separation simultaneously with fermentation with a beneficial result of reducing solution osmolality contributed by the ethanol.